

CLAIMS

1. Steering and driving system (1, 53, 54) for a ground conveyor with an industrial truck (2), a driving engine (21), a steering engine (4) and a steering transmission (5, 32, 32'), through the lesser one on a wheel hub (22) arranged a rotor (23) drivable and at a vertical axis (V) is swivelable, characterized in that the driving engine (2), the steering engine (4) and the steering transmission (5, 32, 32') are co-axially arranged to each other.

2. Steering and driving system as per claim 1, characterized in that the driving engine (2), the steering engine (4) and the steering transmission (5, 32, 32') are arranged in this sequence axially behind each other.

3. Steering and driving system per claim 1 or 2, characterized in that a driving engine shaft (3) is designed as a solid shaft and a steering engine (9, 55) as a hollow shaft.

4. Steering and driving system as per claim 3, characterized in that the driving engine shaft (3) is led co-axially by the steering engine shaft (9, 55).

5. Steering and driving system as per one of the pre-specified claims, characterized in that the driving engine shaft (3) carries a spur-wheel on its farther end by driving engine (2), which is there with a spur-wheel (20) on the input shaft of driving transmission (21) in tooth engagement.

6. Steering and driving system as per claim 5, characterized in that the spur-wheel (20) is fixed on the input shaft of driving transmission (21) designed as a miter gear, whose output shaft is linked with a hub wheel (22) of at least one rotor (23).

7. Steering and driving system as per one of the pre-specified claims, characterized in that the steering transmission (5) is designed as a multi-level planet gear and/or as a Wolfram-gear (32, 32').

8. Steering and driving system as per claim 7, characterized in that the steering transmission shaft is designed as first sun wheel (9, 55), whose outer gearing is there with teeth of planetary carrier (10, 33, 35) of steering transmission (5, 32, 32') in tooth engagement.

9. Steering and driving system as per claim 7 or 8, characterized in that planet wheels (10) of first planet wheel stage mesh with the first sun wheel (9) and are rotatable supported on first planetary carrier (11), which is linked with a second sun wheel (13) slip free, that mesh on a second planetary carrier (14) slip free supported planetary carrier (12) of second planet wheel stage with outer ring gearing of second sun wheel (13), that the planet wheels (11, 12) of the first and second planet wheel stage are in tooth engagement with fixed hollow wheel (16), that the second planetary carrier (14) is linked torque proof with a third sun wheel (15), that the third sun wheel (15) with planetary carrier (18) of third planet wheel stage is in tooth engagement, that the planet wheels (17) of third planet wheel stage are rotatable supported on a third planetary carrier (18), which slip free is linked with the hollow wheel (16) and that the planet wheels (17) of third planet wheel stage with an inner gearing of bearing inner ring (25) of rotary assembly (24) are in tooth engagement, which slip free is linked with a rotary assembly (27) or directly with the housing (51) of driving transmission (21).

10. Steering and driving system as per one of the pre-specified claims, characterized in that the bearing outer ring (50) of rotary assembly (24) is torque proof linked with a vehicle framework of industrial truck.

11. Steering and driving system as per one of the specified claims, characterized in that the housing (8, 8') of steering engine (4) on fastener (37) axial with the bearing outer ring (50).

12. Steering and driving system as per one of the pre-specified claim, characterized in that the hollow wheel (16) between the outer wall of steering engine housing (8, 8') and the bearing outer ring (50) as well as the radial external end of third planetary carrier (18) are arranged.

13. Steering an driving system as per one of the specified claims, characterized in that the steering transmission housing (hollow wheel 16) is linked on separate fastener torque proof with the bearing outer ring (50) of rotary assembly bearing (24).

14. Steering and driving system as per one of the earlier claims, characterized in that a brake (42) affecting on the driving engine shaft (3) is arranged on the driving engine far end of the steering and driving system.

15. Steering and driving system as per earlier claims, characterized in that the steering engine (4) is designed as an electric motor with a disc-shaped rotor.

16. Steering and driving system as per claim 15, characterized in that the housing of driving engine (2) is fixed on the housing (8) of steering engine (4), or both the elements (2,4) use a combined housing (8').

17. Steering and driving system as per earlier claim, characterized in that the steering engine housing (8') display a recording opening (41) for recording of angle of rotation sensors (40).

18. Steering and driving system as per earlier claims, characterized in that the bearing outer ring (50) of the rotary assembly (24) or the rotary assembly (27) display a recording opening (39) for recording of angle of rotation sensors (38).

19. Steering and driving system as per earlier claim, characterized in that signal indicator is considered on rotor (7) of steering engine (4), on the fixed bearing outer ring (50) of rotary assembly (24) and/or on the rotary assembly (27), that together affects with the mentioned angle of rotation sensors for angle of rotation identification.

20. Steering and driving system as per earlier claims, characterized in that an outward radial flange (52) or plate (58) are designed on the housing (43) of steering transmission (32, 32') as well as on the steering engine housing (8, 8') respectively, through which the respective axial bore fixation screws (45) are led for fixation of the same on the bearing outer ring (50).